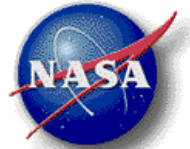




Alpha Magnetic Spectrometer
NASA / DOE

Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes



National Aeronautics and
Space Administration

November 10, 2004
Building 1, Room 920L
2:00 – 4:00 pm

Attendees

CCB members and other attendees are listed in Attachment 1.

Agenda Item 1: Change Requests

- ❑ [AMS-02/D-003: PTRS for the AMS-02 Payload Integration Hardware \(Revision A\) – Mike Fohey/LMSO](#)
 - Change request was approved and signed by Steve Porter/EA.
- ❑ [AMS-02/D-005: Master Schedule Summary and Milestones – Trent Martin/EA](#)
 - OZ document releases to be added to schedule and milestones prior to being posted on the website.
 - Mike Capell/AMS requested the milestones to be within 1-week accuracy.
 - Per Trent Martin/EA milestones will be made to be either early/middle/late as date.
 - Change request was approved and signed by Steve Porter/EA.

Agenda Item 2: Action Item 04-007 – Payload Envelope and Robotics Clearance Waiver – Bob Miley/OZ

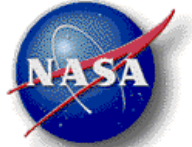
- ❑ [Action Item 04-007](#): Submit waiver for payload envelope and robotics clearance through AMS CCB and then through PICB.
- ❑ Once approved by OZ, it will not need further approval from OB; board has representative for all offices.
- ❑ PIRN process has not been started
- ❑ Book manager working on ICD – currently scheduled for release February 2005



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- ❑ Line item – when ICD released these items are in it
- ❑ Trent Martin/EA wants waivers in ICD when approved

Agenda Item 3: Action Item 04-051 – SSRMS Requirements Around the AMS-02 – Bob Miley/OZ

- ❑ Restatement of Action Item 04-007.
- ❑ Action Closed

Agenda Item 4: Action Item 04-070 – Photo Requirement – Bob Miley/OZ

- ❑ Action item previously closed.
- ❑ Leland Hill/LMSO has put together a preliminary plan
- ❑ Chris Tutt/LMSO – Final photo plan to be part of surveillance plan in the Master Verification Plan (MVP); working with designers to get pictures identified to be needed as work is done.
- ❑ Trent Martin/EA requested Chris Tutt/LMSO to put together plan for surveillance plan

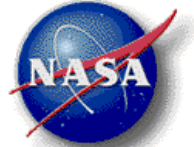
Agenda Item 5: Action Item 04-012 – Logic Train of Control for ACOP and AMS – Paul Nemeth/LMSO

- ❑ Trent Martin/EA – can launch 1 month prior, but need to pre-plan
- ❑ Trent Martin/EA – why full-duplex communication link with AMS?
 - Communication going on all the time between the AMS, ACOP, and command
 - Limited amount of buffer
 - Mike Capell/AMS – need full-duplex communication 24 hours a day, 7 days a week; can have short scheduled interruption



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- Win Reid/OZ – operations concept projection; high level presentation; to get with Paul Nemeth
- ACOP running independently with scheduled crew monitoring
- Leland Hill/LMSO – ACOP required for charging? – Needed for recording purposes, not actively controlling
- Recommendation
 - Fly ACOP 3 to 6 months prior to AMS launch to minimize impacts when AMS arrives
 - Fly ACOP associated cabling with ACOP to simplify set-up procedure and avoid searching through onboard stowage
 - Avoid flying fiber cables early as they are somewhat “fragile” and have strong bend radius requirements
- Trent Martin/EA - okay with 3-6 month schedule
- Bob Miley/OZ – prepositioning, can software be loaded at a later date?

[Agenda Item 6: Risk Management – Presentation of Risk Matrix – Chris Tutt/LMSO](#)

- Deferred to be reviewed with Trent Martin/EA and /or Steve Porter/EA late next week

Other Items Discussed

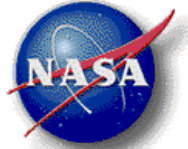
- FIT Test
 - Win Ried/OZ – asked about FIT Test
 - Paul Nemeth/LMSO stated a plan was in place to get software developed on schedule and in place
 - Mike Capell/AMS asked about top level software drops



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- ❑ Master Verification Plan (MVP)
 - Dave Kaplan/NT – plan for MVP; target end date November 2004
 - Trent Martin/EA draft due end of January 2005, not in time for TIM
 - Dave Kaplan/NT – rebaselining, wanted to verify it was still a priority

Trent Martin adjourned meeting at 2:42 pm.

Minutes Approval: _____

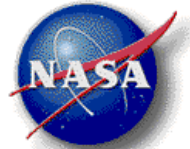
A handwritten signature in black ink, appearing to be "Trent Martin", is written over a horizontal line.



Alpha Magnetic Spectrometer
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November 10, 2004



National Aeronautics and
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Attachment 1

CCB Sign-in Sheet



Alpha Magnetic Spectrometer
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Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



National Aeronautics and
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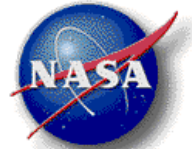
November 10, 2004
2:00 – 4:00 pm
Building 1, Room 920L

Position	Name	Phone Number	Signature
Chairman	Porter, Steve	281-244-7149	
Member	Martin, Trent	281-483-3296	<i>Trent Martin</i>
Member	Vaughan, Anne	281-244-0257	
Member	Conwell, J.J.	281-483-1178	
Member	Kaplan, David	281-483-3729	<i>David Kaplan</i>
Member	Reid, Winston	281-226-4809	<i>W. Reid</i>
Member	Keifenheim, Jack	321-867-6028	
Member	Hungerford, Bill	281-218-7022	
Member	Nemeth, Paul	281-333-6116	<i>Paul Nemeth</i>
Secretary	Cox, Donna	281-333-6468	<i>Donna Suzanne Cox</i>



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Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



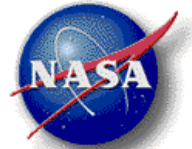
National Aeronautics and
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Position	Name	Phone Number	Signature
Attendee	Arnold, Larissa	281-483-0623	
Attendee	Bailey, Chuck	281-244-5093	
Attendee	Caldwell, Steve	281-333-6263	
Attendee	Capell, Mike		<i>via telecon</i>
Attendee	Clark, Craig	281-333-6779	
Attendee	Cook, Gene	281-244-8467	<i>[Signature]</i>
Attendee	Corbin, Cheryl	281-244-1830	
Attendee	Cornwell, John	281-483-9164	-- On Travel --
Attendee	Dennett, Peter		
Attendee	Donahoe, Stan	281-483-4256	
Attendee	Echois, Ray	256-544-5354	
Attendee	Elmore, Dave	281-333-7496	
Attendee	Farner, David	281-333-6481	
Attendee	Fohey, Mike	281-333-6115	
Attendee	Gibb, Margaret	281-244-0284	
Attendee	Hall-Farley, Kazuko		
Attendee	Harold, Ross A.	281-333-6134	<i>[Signature]</i>
Attendee	Harris, Mary	281-483-82661	



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Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



National Aeronautics and
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Position	Name	Phone Number	Signature
Attendee	Harris, William		
Attendee	Hill, Leland	281-333-6539	<i>Leland Hill</i>
Attendee	Jeevarajan, Judith	281-483-4528	
Attendee	Lear, Dana	281-483-2984	
Attendee	Lewis, Ruthan	301-286-1694	
Attendee	Lear, Dana	281-483-2984	
Attendee	Lewis, Ruthan	301-286-1694	
Attendee	Miley, Bob	281-266-4938	<i>B. Miley</i>
Attendee	Miller, Herman	281-333-6342	
Attendee	Morgan, Susan	281-483-4935	
Attendee	Mott, Phil	281-333-6451	<i>Phil Mott</i>
Attendee	Munoz, Nancy	281-483-9015	
Attendee	Orndoff, Evelyne	281-483-9117	
Attendee	Petri, David	281-483-9622	
Attendee	Piatek, Irene	281-483-9043	
Attendee	Rains, George (Ed)	281-244-8111	
Attendee	Rybicki, Dan	281-244-5181	
Attendee	Sauceda, Tania	281-244-1612	



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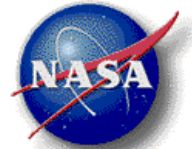
Position	Name	Phone Number	Signature
Attendee	Rybicki, Dan	281-244-5181	
Attendee	Sauceda, Tania	281-244-1612	
Attendee	Schoenberg, Rich	281-483-6437	
Attendee	Schwarz, Roger	281-483-2378	
Attendee	Stanford, John	281-483-1347	<i>John Stanford</i>
Attendee	Stevenson, L. D.	281-244-8890	
Attendee	Tutt, Chris	281-333-7634	<i>C. Tut</i>
Attendee	Kathy Bankowitz	GSFC	
Attendee	Carlos G. Boncan	281-244-1902	<i>Carlos G. Boncan</i>
Attendee	Tim URBAN	281-333-6008	<i>Tim Urban</i>
Attendee	ART Nelson, Jr	281 333 6492	<i>ART Nelson</i>
Attendee			
Attendee			
Attendee			
Attendee			
Attendee			
Attendee			
Attendee			



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November 10, 2004



National Aeronautics and
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Attachment 2

Open Action Items Matrix



Alpha Magnetic
Spectrometer NASA / DOE

Open Paper Management Tool

Open Items Report



National Aeronautics and
Space Administration

Open Items Report

Open Item Number: 04-004

RID Open Date: 7/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Bob Miley/OZ
Trent Martin/EA

Phone Number(s):

Action Due Date: 10/31/2004

Action Completion Date:

Action: Work with hardware providers in ISS and STS to transfer H/W to AMS

Action Status: 09/15/04 - in work. Win Reid working to ship FRGF/PVGF. Some differences between available hardware part numbers being worked prior to shipment. EVA Handrails also being worked. Status worksheet posted on PD Portal under the 'Links' tab for AMS. LM has provided an email list of hardware, part numbers; who and what location

Open Items Report

Open Item Number: 04-006

RID Open Date: 7/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Donna Cox/LMSO

Phone Number(s): 281-333-6468

Action Due Date: 10/13/2004

Action Completion Date:

Action: CAWG/PICB documentation needs to be retrieved from the station website and posted on the AMS website (get with Bob Miley)

Action Status: 08/17/04 - Bob Miley sent urls to Donna Cox

08/11/04 - Bob Miley to send links to Donna Cox

08/09/04 - Sent email to Bob Miley

08/01/04 - Plan due by 09/18/04

Open Items Report

Open Item Number: 04-007

RID Open Date: 7/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Bob Miley/OZ

Phone Number(s):

Action Due Date: 10/27/2004

Action Completion Date:

Action: Submit waiver for payload envelope and robotics clearance through AMS CCB and then through PICB

Action Status: 09/29/04 - On CCB Agenda 10/27/04

09/15/04 - Waiver not submitted yet - the ISS plan for the adjacent PAS site is evolving. The EXPRESS Pallet development has slipped into the 2006 timeframe.

08/11/04 - Plan waiver action was added to 09/08/04 agenda

Open Items Report

Open Item Number: 04-012

RID Open Date: 7/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 ***Actionee(s):*** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 11/10/2004

Action Completion Date:

Action: Present logic train of control for ACOP and AMS to CCB (per Steve Porter)

Action Status: 09/29/04 - to be completed by 11/10/04

Open Items Report

Open Item Number: 04-018

RID Open Date: 7/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Dave Kaplan/NT

Phone Number(s): 281-483-3729

Action Due Date: 9/8/2004

Action Completion Date:

Action: Define the plan for the assuring quality and reliability for the NASA provided Payload Integration Hardware (PIH) as well as the plan for providing insight into the quality and reliability of the AMS Experiment.

Action Status: 10/05/04 - On CCB Agenda on 10/13/04

Memorandum in work; process is ongoing

08/17/04 - Win Reid spoke with L. D. Stevenson and L.D. Stevenson will get with the VIT Team to see if they have any requirements.

Open Items Report

Open Item Number: 04-032

RID Open Date: 7/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Open Items Report

Action Number: 1 **Actionee(s):** MOD/OZ

Phone Number(s):

Action Due Date: 9/18/2004

Action Completion Date:

Action: Level of detail for the contingency return planning needs to be discussed

Action Status: 09/29/04 - To hold splinter group on this issue at JSC TIM in October 2004

08/20/04 - Larrissa Arnold spoke with DX/Jill Reisman and UF4.1 MAGIK/John Bussell, below is the following information that was received on contingency return planning. Nominally, the MAGIK analysis performed for a payload/object is for the trajectory of taking it out of the payload bay and attaching it to station. For payloads/objects that are left on orbit, it is often assumed that if the object would have to be put back in the bay it would use the reverse trajectory and therefore the MAGIK analysis is not performed. Pics and camera views for this reverse trajectory would be known but if any extra berthing cues were needed they wouldn't nominally be available.

However the additional analysis for contingency return could be performed if the MAGIK personnel were directed to do that. Also, since it is currently baselined that AMS will return on a shuttle flight, whatever shuttle flight is named for AMS return would perform the analysis of putting it back in the payload bay. John Bussell did say that in the past this reverse analysis hasn't been performed much but recently they worked with the ESP-2 personnel to create any extra berthing cues needed if ESP-2 would have to be placed back in the bay on LF-1. DX said, if deemed necessary, for the flight we can have a contingency procedure that shows pics and camera views for berthing the AMS back in the bay. Nominally this would be the reverse trajectory of taking AMS out of the bay.

08/11/04 - Larissa Arnold will confirm

08/01/04 - Plan due by 09/18/04

Open Items Report

Open Item Number: 04-046

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Bill Hungerford

Phone Number(s):

Action Due Date: 9/30/2004

Action Completion Date:

Action: Build an integrated logic flow, assembly, and test (LFAT Schedule?) schedule and for the payload at CERN. Include a clear plan for Quality Control and MRB Authority for the payload integration and assembly at CERN. Ensure that an iterative electrical / functional test scheme is included to ensure adequate operation of hardware / software before access to that "installed" crate or detector is no longer possible.

Action Status: 08/01/04 - Plan due by 09/18/04; Questionare sent to detector groups to initiate process. Meeting scheduled at CERN Sept 13 and 14, chaired by Giuliano Laurenti, to consolidate and refine inputs from various detector and sub-system groups. Should result in development of preliminary LFAT Schedule for review at October TIM

Open Items Report

Open Item Number: 04-047

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Steve Porter

Phone Number(s):

Action Due Date: 9/30/2004

Action Completion Date:

Action: Plan for meeting of Code T and Prof. Ting.

Action Status:

Open Items Report

Open Item Number: 04-049

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Donna Cox/LMSO
Jack Keifenheim/KSC

Phone Number(s): 281-333-6468
321-867-6028

Action Due Date: 11/12/2004

Action Completion Date:

Action: Present a plan and coordination for AMS TIM's at JSC and KSC; FIT test at KSC

Action Status: 10/04/04 - Still waiting on list of CERN international visitors from L. Barrin; S. Lazado at KSC looking into status of NAC Packages completed in 02/04

08/01/04 - Plan due by 09/18/04; Currently working on list of international visitors with L. Barrin at CERN; Goal is to have requests submitted to KSC no later than 11/12/04

Open Items Report

Open Item Number: 04-050

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Steve Porter/EA
Trent Martin/EA

Phone Number(s): 281-244-7149
281-483-3296

Action Due Date: 9/30/2004

Action Completion Date:

Action: Review AMS with Doug Cooke with regard to providing Radiation Shielding for Exploration and discuss the need to maintain the NASA POC with the current AMS Team.

Action Status:

Open Items Report

Open Item Number: 04-051

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** OZ/Bob Miley

Phone Number(s):

Action Due Date: 10/27/2004

Action Completion Date:

Action: Finalize SSRMS requirements around the AMS-02

Action Status: 09/29/04 - To be discusses at the CCB on 10/27/04

08/11/04 - Needs hazard report

08/01/04 - Plan due by 09/18/04

Open Items Report

Open Item Number: 04-052

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Steve Porter
Trent Martin

Phone Number(s):

Action Due Date: 10/29/2004

Action Completion Date:

Action: Begin the discussion with regards to AMS-02 PAO Effort.

Action Status: 10/04/04 - To be added to TIM Agenda as a splinter meeting

Open Items Report

Open Item Number: 04-055

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 10/20/2004

Action Completion Date:

Action: Review the composite panel strength testing results and requirements from the Structures Working Group with variability of data and relative paucity of data.

Action Status: 10/05/04 - Chriss Tutt setting up meeting with SWG

08/01/04 - Plan due by 09/18/04

Open Items Report

Open Item Number: 04-056

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1

Actionee(s): Chris Tutt
Bill Hungerford
Paul Nemeth

Phone Number(s):

Action Due Date: 2/28/2004

Action Completion Date:

Action: Provide the plan for Surveillance of Safety Critical assembly and test steps of Collaboration Hardware.

Action Status:

Open Items Report

Open Item Number: 04-059

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Dave Kaplan

Phone Number(s):

Action Due Date: 9/30/2004

Action Completion Date:

Action: Determine if the JSC EEE Parts Board needs to review the AMS P/L electronics parts / processes / documentation.

Action Status: 09/29/04 - Trent Martin to discuss this action with Dave Kaplan

Open Items Report

Open Item Number: 04-061

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Bill Hungerford/AMS

Phone Number(s):

Action Due Date: 10/22/2004

Action Completion Date:

Action: Review the Power Supply Distribution Crate development plan wrt EM-Protoflight -vs- EM-QM-FM requirements.

Action Status: 08/31/04 - Per Mike Capell we should have a firm plan of action on how to proceed at the Oct. TIM.

08/18/04 - Bill Hungerford will discuss action items with Mike Capell and provide new date when action will be complete.

08/11/04 - Bill Hungerford needs formal letter from Mike Capell

Open Items Report

Open Item Number: 04-064

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 9/30/2004

Action Completion Date:

Action: Provide information to Collaboration Assembly & Integration Team at CERN on a smart-tool for anthropomorphic analysis of AMS Assembly.

Action Status: 10/05/04 - Chris Tutt to call PLAID lab

09/29/04 - Get name of tool so action can be closed

08/01/04 - Plan due by 09/18/04

Open Items Report

Open Item Number: 04-069

RID Open Date: 8/4/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Leland Hill/LMSO
Chris Tutt

Phone Number(s): 281-333-6539

Action Due Date: 5/1/2005

Action Completion Date:

Action: Coordinate closeout photo tasks; Need to verify we get closeout photos before hardware is closed up; Need update the pre-flight imagery plan

Action Status: 10/05/04- final documentation must be done after Surveillance Plan for Safety Critical Structure

09/29/04 - Draft documentation is complete

Open Items Report

Open Item Number: 04-070

RID Open Date: 8/4/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Bob Miley/OZ

Phone Number(s):

Action Due Date: 10/27/2004

Action Completion Date:

Action: Dredge up crew photo requirements from OZ and crew office

Action Status: 09/29/04 - on schedule for next CCB (Re: Photo Requirements) on 10/27/04

09/17/04 - L.D. Stevenson reported to Win Reid that the Crew Office (via the VIT team) does not have any unique closeout photo requirements for AMS during it's assembly.

09/14/04 - In work. Win Reid spoke with L. D. Stevenson about this in mid-August and again on 9/2/04. L.D. will get with the VIT Team to see if they have any requirements.

Open Items Report

Open Item Number: 04-079

RID Open Date: 8/4/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Mike Fohey/LMSO

Phone Number(s): 281-333-6115

Action Due Date: 11/3/2004

Action Completion Date:

Action: Get with Bill Hungerford to discuss ideas for framework, processing and typing of level 3 appendix. Define detector steps for the MVP.

Action Status: 10/05/04 - Mike Fohey will meet with Bill Hungerford after October TIM

08/11/04 - Meeting scheduled for 08/18/04 to discuss

Open Items Report

Open Item Number: 04-090

RID Open Date: 8/18/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** OZ/Bob Miley
Trent Martin/EA
Bill Hungerford/AMS

Phone Number(s):
281-483-3296

Action Due Date: 10/29/2004

Action Completion Date:

Action: Manifest two ACOPs - One primary and one as "spare." To work on when ACOP needs to fly and if it needs to be in place 3-6 months ahead of AMS-02. Then they need to get with Bob Miley to further discuss ACOP. To work with AMS Collaboration about ISS stowage problem and develop a plan for the number of harddrives that will be required for AMS.

Action Status:

Open Items Report

Open Item Number: 04-092

RID Open Date: 9/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth
Jack Keifenheim

Phone Number(s): 281-333-6116
321-867-6028

Action Due Date:

Action Completion Date:

Action: Formulate a schedule for HRFM; Jack Keifenheim to telecon Steve Porter next week about HRFM schedule conflict

Action Status: 10/05/04 - KSC has worked out schedule with ISIL that accomodates AMS requirements for the High Rate Frame Multiplexer (HRFM) for the Functional Integration Test (FIT). KSC to receive the HRFM on 12 January 2005, and ship the HRFM back to ISIL on 24 January 2005. This will allow appropriate time to integrate the HRFM into the Payload Test and Checkout System (PTCS), and allow for testing with AMS at the beginning of the FIT window, currently planned for January 17-28. An Avionics Equipment Request (AER) was submitted to the ISS-Avionics Equipment Panel (AEP) to document the agreement.

Open Items Report

Open Item Number: 04-094

RID Open Date: 9/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO
KSC
AMS Collaboration

Phone Number(s): 281-333-6116

Action Due Date: 10/27/2004

Action Completion Date:

Action: To work together to create a FIT process schedule (pre-test readiness review, pre-requirements review [test procedure review])

Action Status:

Open Items Report

Open Item Number: 04-100

RID Open Date: 9/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Donna Cox/LMSO

Phone Number(s): 281-333-6468

Action Due Date: 10/13/2004

Action Completion Date:

Action: After receiving all CR Evaluations from remaining mandatory evaluators, send email to AMS Project Team to ask for any final input on CR AMS-02/D-003

Action Status:

Open Items Report

Open Item Number: 04-104

RID Open Date: 9/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Jack Keifenheim/NASA-KSC

Phone Number(s): 321-867-6028

Action Due Date: 10/18/2004

Action Completion Date:

Action: Send ITA for next year to Steve Porter

Action Status:

Open Items Report

Open Item Number: 04-105

RID Open Date: 9/15/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** John Cornwell/EC

Phone Number(s): 281-483-9164

Action Due Date: 10/29/2004

Action Completion Date:

Action: Add AMS thermal blankets to work plan and have everything in place that they will need

Action Status: 10/05/04 - Trent Martin and Craig Clark met with EC and discussed plan for blankets, determined potential cost saving, and discussed option with AMS Collaboration

Open Items Report

Open Item Number: 04-113

RID Open Date: 10/13/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Donna Cox/LMSO

Phone Number(s): 281-333-6468

Action Due Date: 11/13/2004

Action Completion Date:

Action: Add all TBRs from any of the AMS Project Documentation to the OPMT; need concurrence on who is responsible for closing items and closure date.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-01

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-10: Lack of Safety Information/ Documentation for the Thermal Control System (TCS)

Affected Document: JSC 28792

Initiator(s): H. Flynn/NASA-JSC

Initiator(s) Phone Number: 281-483-1198

Description: From the limited information provided in Table E2, it is not possible to determine the safety requirements compliance of the TCS. Missing information includes: a system schematic, quality and type of working fluid, brief explanation(s) of the subsystem Maximum Design Pressure (MDP) determinations, itemized list of each part number/component, etc

RID Disposition: Approved

RID Status: Closure Pending Documentation

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-6734

Action Due Date: 1/30/2005

Action Completion Date:

Action: Provide information in Phase II Safety Data Package and SVP will be updated.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-04

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-14: Lack of EVR Data in CDR Package

Affected Document:

Initiator(s): A. Mootty/Boeing PEI

Initiator(s) Phone Number: 281-226-4605

Description: The CDR package is lacking data (both design and analysis data) on the AMS-02 EVR accomidations for assessment of roboticss compatability with SSP 57003 requirements.

RID Disposition: Approved

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO
Paul Nemeth/LMSO

Phone Number(s): 281-333-6134
281-333-6116

Action Due Date: 1/30/2005

Action Completion Date:

Action: AMS will provide all design and analysis data required to meet EVR requirements per SSP 57003.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-05

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-15: AMS-02 Passive Payload Attach System (PAS)

Affected Document: N/A

Initiator(s): M. Whitworth/Boeing PEI

Initiator(s) Phone Number: 281-226-4234

Description: SSP 57003 para. 3.1.1.2.3 (Design Loads) requires that the PAS/UCCAS interface shall be designed to withstand the interface loads in Table 3.1.1.2.3-2 combined with the preload defined in paragraph 3.1.3.1.3.1 and the thermal loads derived from the environment defined in paragraph 3.5.1.12. Paragraph 3.5.1.12 states to use 0.2G and 0.4G on orbit load factors. This analysis used the interface loads and back-calculated the on-orbit load factors which were less than 0.05 G's. This calculation method is not appropriate.

RID Disposition: Approved

RID Status: Open due to pending action

Action Item Information

Action Number: 2 **Actionee(s):** C. Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 10/20/2004

Action Completion Date:

Action: Update SVP and complete analysis.

Action Status: 10/05/04 - SVP updated, still needs signature

Open Items Report

Open Item Number: AMS_02-CDR-06

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-17: Meteoroid/Orbital Debris Shielding

Affected Document: AMS-02 CDR Version 2

Initiator(s): E. Christiansen/NASA

Initiator(s) Phone Number: 281-483-5311

Description: Shielding from meteoroid/debris impact is inadequate to meet protection requirements. Shielding of pressurized vessels on AMS-02 such as the vacuum case and TRD (as well as any other pressure vessel) is required to prevent catastrophic rupture of these tanks in the event of meteoroid/debris impact which would release high-velocity fragments creating a potentially serious safety issue for on-board crew. The assessed probability of no penetration (PNP) using specified environment models is 0.97 which is far below the specified 0.997 PNP requirement. Updating ballistic limit equations and models as described in the forward work plan does not appear adequate to show compliance with requirements. Additional or significantly enhanced shielding will likely be necessary to meet safety requirements.

RID Disposition: Approved

RID Status: Open - Deferred to next cycle review

Action Item Information

Action Number: 1 **Actionee(s):** D. Lear/LMSO

Phone Number(s): 281-483-2998

Action Due Date: 7/1/2006

Action Completion Date:

Action: Complete analysis and coordinate design of debris shields. To be completed by Phase III Safety.

Action Status: Open - Deferred to next cycle review

Open Items Report

Open Item Number: AMS_02-CDR-07

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-23: Design Reflects Out-Of-Date EBCS Configuraiton

Affected Document: SEG39135720

Intiator(s): T. J. Urban/LMSO-ER3

Initiator(s) Phone Number: 281-333-6008

Description: Top level AMS assembly does not show EBCS connector guard and EBCS MLI blanket.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO

Phone Number(s): 281-333-6134

Action Due Date: 12/1/2005

Action Completion Date:

Action: Update AMS-02 assembly drawings.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-08

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-2-07: Bolt in Sloppy Holes Assured to Take Shear

Affected Document: N/A

Initiator(s): B. Ritter/GSFC

Initiator(s) Phone Number: 301-286-9022

Description: Bolts attaching the support ring to the conical flange were assumed to transfer shear, even though they are in sloppy holes this is non-conservative.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 1/30/2005

Action Completion Date:

Action: Work bolt concerns with the SWG.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-09

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-2-15: Missing Documents - Structural Analysis

Affected Document: N/A

Initiator(s): Murthy Pinnamaneni Structures/Boeing

Initiator(s) Phone Number: 281-226-5665

Description: The following items were not available in the Data Package: design load factors, dynamic analysis procedure and results. From 2.2.1, AMS Report Outline.doc, Magnetic Strap Analysis and the Coupled Loads Analysis, which are identified to be in ''separate sections.'' Reports/documents that include: Dynamic Loads Analysis Description; Payload/Shuttle Interface Loads; Trunion Deflection; Trunion Misalignment Loads; and Uncertainty Factors Used in the Analysis.

RID Disposition: Approved

RID Status: Closure Pending Documentation

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 7/1/2006

Action Completion Date:

Action: Update stress report and dynamics analyses reports. To be completed by Phase III Safety Data Pack.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-10

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-3-01: Evaluation that Passive UMA Remains Within Its Temperature Range

Affected Document: AMS-02 TCS Presentation

Initiator(s): V. Sanders/Boeing-PEI

Initiator(s) Phone Number: 281-226-4266

Description: SSP 57003 requirements 3.1.3.2.3.1 D is not listed as an applicable section. This section requires that the UMA passive half be maintained within its allowable temperature range of -90 to +190 degrees F.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** R. Miley/USA-OZ
G. Cook/NASA-OZ

Phone Number(s):

Action Due Date: 8/1/2003

Action Completion Date:

Action: Provide UMA thermal model to AMS.

Action Status:

Open Items Report

Action Number: 2 *Actionee(s):* C. Clark/LMSO

Phone Number(s): 281-333-6779

Action Due Date: 1/30/2005

Action Completion Date:

Action: Perform thermal assessment.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-11

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-3-05: Interface Based on Out-Of-Date EBCS Configuration

Affected Document: SSP 57213

Initiator(s): T. J. Urban/LMSO-ER3

Initiator(s) Phone Number: 281-333-6008

Description: Thermal design/analysis based on old EBCS configuration. Impacts:

1. EBCS keep alive heater 5-2 buses @ 50W ea., not 25W.
2. EBCS MLI blanket.
3. EBCS avionics box optical properties.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** G. Le/NASA-OM
V. Sanders/Boeing/PEI

Phone Number(s):

Action Due Date: 10/18/2004

Action Completion Date:

Action: Provide updates to SSP 57003. Update SSP 57003 and issue.

Action Status: 10/05/04 - Paul Nemeth to check to see if ICD has been updated

Open Items Report

Action Number: 2 *Actionee(s):* C. Clark/LMSO

Phone Number(s): 281-333-6779

Action Due Date: 3/1/2005

Action Completion Date:

Action: Perform analysis.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-12

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-18: Presentation Issues

Affected Document: Avionics & ACOP Presentati

Initiator(s): H. Hoang/PEI
J. Fu/PEO

Initiator(s) Phone Number: 281-226-6054

Description: The presentation for avionics is not adequate for documentation purpose to show compliance with SSP 57003 requirements.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 1/30/2005

Action Completion Date:

Action: Supply document listing EMI/electrical specs.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-13

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-20: Power Compatability and EMC Testing

Affected Document: Avionics Overview

Intiator(s): H. Hoang/PEI
J. Fu/PEO

Initiator(s) Phone Number: 281-226-6054

Description: The EME Control Plan (or equivalent) used to establish the plan for how AMS will be compatable with the ISS EMI requirements is lacking in the CDR package.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Supply EME control plan.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-14

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-24: No Cable List and Derating Analysis of Cables

Affected Document: N/A

Initiator(s): D. Beverly/EEE

Initiator(s) Phone Number: 281-483-0250

Description: There is no evidence of wiring or external cable list. The derating of the wire and cables has not been performed.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** D. Nguyen/LMSO

Phone Number(s): 281-333-6119

Action Due Date: 10/30/2004

Action Completion Date:

Action: Supply wire list and derating details.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-15

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-25: Connector Designator in AMS-02 Wiring Diagram

Affected Document: SIG39136082

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: I/F Panel A P6/J6 should be P7/J7 to interface from the Standard Switch Panel (SSP), using the standard mixed cargo harness, to AMS-02 control electronics per earlier agreement between the customer & USA/NASA ('Proposed STS cabling requirements for AMS-02' agreed to October 30, 2001: Danny Irvin, Mariella Hartgerink, Michael Gerlach, and Ed Walters).

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status: 10/05/04 - Paul nemeth to check on status of action

Open Items Report

Open Item Number: AMS_02-CDR-16

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-26: AMS-02 Wiring Schematic

Affected Document: SIG39136082

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description:

1. On sheet 3, i/f panel a connector p6/j6 should be p7/j7 to interface to the ssp via smch cabling per earlier agreement ('proposed sts cabling requirement for ams-02' agreed in october 30, 2001: danny irvin, mariella hartgerink, michael gerlach, and ed walters). Also the emc classification for interface wiring through j6/p6 appears to be rf. Change the shielded pair wires to twisted pair wires for eo, ho, or ml class wiring - where appropriate. Redlines will be given @ ams-02 cdr avionics splinter.
2. On sheet 3, the interface wiring through i/f panel a connector p5/j5 has two return line when there is only one available on p5 pin 35. Also, the 3 discrete output low signals from the mdm pf1 are available on pda connector p5 pins 32, 33 and 34.
3. On sheet 3, the interface wiring through i/f panel a connector j4/p4 is missing a pair of shielded ground wires for rs-422 #1 and #2. Pin 9 of pda connector p4 is assigned for rs-422 #2 gnd and pin 10 of pda connector p4 is for rs422 #1.
4. On sheet 3, interface wiring from ams-02 rs-422 #1 and #2 through i/f panel a connector j4/p4 to pdip2 p103 / j103 is different from the 'proposed sts cabling requirement for ams-02' provided to paul nemeth via e-mail from d. Irvin on 12/07/2001 and boeing control schematic vs72-config 1 last revised on 11/24/2002. A unique cable will have to be built to support ams-02 rf requirements.
5. This drawing should show the ams-02/gfe cable required to provide connectivity between ams-02 rs-422 service and t-0 connector j59.

RID Disposition: Approved

RID Status: Open

Action Item Information

Open Items Report

Action Number: 1 *Actionee(s):* Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-17

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-28: SPHe Electronics to I/F Panel A, GPC Cable Assembly, W11

Affected Document: SEG39136103

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: Sheet 2 of the above documents has two return lines when there is only one available on J5 mating Connector P5 Pin 35. Interface from the MDM PFI which provides 3 discrete output low signals to the AMS-02 control electronics are available on connector P5 Pins 32, 33, and 34.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** D. Nguyen/LMSO

Phone Number(s): 281-333-6119

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-18

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-29: SFHe Electronics to I/F Panel A, Cable Assembly, W10

Affected Document: SEG39136102

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: Interface from the Standard Switch Panel (SSP) using the standard mixed cargo harness is available on PDA Connector P7, which will not mate with J6 on the above document. This necessitates changing NLS0T14-35SAT2 to NB0E22-55SNT3.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** D. Nguyen/LMSO

Phone Number(s): 281-333-6119

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-19

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-30: Vacuum Pump to I/F Panel A, Cable Assembly, W9

Affected Document: SEG39136101

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: Pin group and assignments for J9 Connector does not match up with the pin grouping and assignments for P9 Mating Connector as described in Boeing VS72-Config 1 (see details below). Also, the EMC classifications appears to be RF by Shuttle designation, needs to be EO, which are twisted wires.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** D. Nguyen/LMSO

Phone Number(s): 281-333-6119

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-20

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-31: AFD AMS-02 Wiring Schematic Received 05/05/03 and 05/06/03

Affected Document: SID39136110

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: 1. The "GND" pin for PDIP2 connector J105 to the left of 21 and 20 shielded pair should be pin 7.

2. The communication flow in the above document is unclear via the end to end interface nomenclatures. The RS-422 transmit and receive signal can be misinterpreted by the payload (AMS-02) and result in a last minute payload wiring.

Please note there is a concern regarding the second RS-422 interface from PDIP2 P105 to PDIP1 J4 which can potentially interfere with a shared use of the ku-band signal processor. It is preferred that only the required signal interface to PDIP1 J4 is used. If the high data rate digital data input of the ku-band signal processor is required per SIG39136083, use connector J4 (mating connector for P4) on PDIP1 Pin 15 and 16.

Also, it is recommended that pin to pin interface from PDIP2 P105 to P103 be as follows:

PDIP2 P105 - 3, 7, 6, 5, 12, 13, 10, 9, 2, 1

PDIP P103 - 3, 7, 13, 12, 5, 6, 10, 9, 2, 1

RID Disposition: Approved

RID Status: Open

Action Item Information

Open Items Report

Action Number: 1 *Actionee(s):* D. Nguyen/LMSO

Phone Number(s): 281-333-6119

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-21

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-32: Missing Documents - Avionics

Affected Document: N/A

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: From the Flight Avionics Drawing Index, the following items were not available for review in the data package: 39136117 ROEU Connector Panel (Panel A), 39136118 ROEU Connector Panel Bracket (EW, YJ).

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 11/15/2004

Action Completion Date:

Action: Implement recommendation.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-22

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-33: RS422 DDRS-02/PDIP Cable Assembly

Affected Document: SED39136111

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: 1. The "GND" Pin for PDIP2 on connector P105 will mate with connector J105 pin 7.

2. Please see RID (boeing tracking number) "Boeing-14 RID AFD AMS-02 wiring Schematic" against SID39136110. The communication flow in the above document is unclear via the end to end interface nomenclatures. The RS-422 transmit and receive signal can be misinterpreted by the payload (AMS-02) and result in a last minute payload wiring.

Please note there is a concern regarding the second RS-422 interface from PDIP2 P105 to PDIP1 J4 which can potentially interfere with a shared use of the ku-band signal processor. It is preferred that only the required signal interface to PDIP1 J4 is used. If the high data rate digital data input of the ku-band signal processor is required per SIG39136083, use connector J4 (mating connector for P4) on PDIP1 Pin 15 and 16.

RID Disposition:

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Supply EME control plan.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-23

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-34: RS422 T-0/PDIP Cable Assembly

Affected Document: SED39136112

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: 1. The "GND" Pin for PDIP2 on connector P105 will mate with connector J105 Pin 7. Also, the gnd wire routed to connector P4 is inconsistent with drawing SID39136110, which routes the same wire to P103.

2. Please see rid for SID39136110. The communication flow in the above document is unclear via the end to end interface nomenclatures. The RS-422 transmit and receive signal can be misinterpreted by the payload (AMS-02) and result in a last minute payload wiring.

Please note there is a concern regarding the second RS-422 interface from PDIP2 P105 to PDIP1 J4 which can potentially interfere with a shared use of the ku-band signal processor. It is preferred that only the required signal interface to PDIP1 J4 is used. If the high data rate digital data input of the ku-band signal processor is required per SIG39136083, use connector J4 (mating connector for P4) on PDIP1 Pin 15 and 16.

Also, it is recommended that pin to pin interface from PDIP2 P105 to P103 be as follows:

PDIP2 P105 - 3, 7, 6, 5, 12, 13, 10, 9, 2, 1

PDIP P103 - 3, 7, 13, 12, 5, 6, 10, 9, 2, 1

RID Disposition: Approved

RID Status: Open

Action Item Information

Open Items Report

Action Number: 1 *Actionee(s):* Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-27

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-6-17: EVA Crew Person Safety

Affected Document: N/A

Initiator(s): M. Rouen/NASA-EC5

Initiator(s) Phone Number:

Description: An unteathered crewperson will be acclerated toward the ams magnet with increasing speed as increasing field strength is encountered. Three issues are generated:

- 1) The impact velocity could exceed the EMU certified impact velocity (2 ft/sec).
- 2) The crewperson could be drawn past the certified field strength of 300 gauss (STS EMU, ORLN 175 gauss). High field strengths have been shown to affect the EMU fan operation. The worst case is to stop the fan which would force the crewperson onto the 30 min. emergency system. (The fan has been stopped in testing by a magnetic field interacting with the fan control circuits. No permanent damange isexpected so a fan restart is expected to be successful once the crewperson is out of the magnetic field.)
- 3) Worst case orientation could make it difficult for the crewperson to extract themselves because there is a lack of hanholds on the high field strength side of the payload.

RID Disposition: Approved

RID Status: Open

Action Item Information

Open Items Report

Action Number: 1 *Actionee(s):* P. Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date:

Action Completion Date:

Action: Get agreement from initiaitor

Action Status: 10/05/04 - Will not perform EVA while magnet powered

Open Items Report

Open Items Report

Open Item Number: AMS_02-Doc_Review-01

RID Open Date: 6/24/2004

RID Closure Date:

Title: Updates to Structural Verification Plan

Affected Document: JSC 28792

Initiator(s): G. Laurenti/AMS

Initiator(s) Phone Number: +41 (22) 767 7582

Description: 1) Page 3 : The experiment's electronics, scintillators, and detectors shall be designed and built at CERN in Geneva, ETH-Zurich, and several other European and Asian organizations and institutions. It is not correct , it gives the impression that CERN is participating to the experiment which is not the case.

2) Pages 9–40-60-61-62 there are description and requirement for the stir welding to build the USS, I am sure that that if you are not using it as you presented this part can be deleted and substituted by a new one.

3) Pages 10 and others still we talk about LEPS , but all our drawing present no LEPS and I think that we do not think to introduce them.

4) Page 18 TOF dimensions and description are not updated : the Honeycomb panel are circular etc.... should be the honeycomb panels are square with a size of about 1350 mm. The thickness of the aluminum core is 100 mm for the UTOF and 50 mm for the LTOF. And a 0.5 mm aluminum skin is used.

5) Page 24 The sentence Just before the table: Although the Nx and Nz load factors do slightly exceed the current design load factors (shown in Table 4-1), the AMS-02 project feels that there is adequate conservatism in the current design load factors. It does not sound very scientific and not even very clear (that we use load factors lower of what is permitted, or advisable but since the margins are large we know that but we feel safe in any case ?) Personally I did not even know that. Also this AMS –02 project is a strange entity, if everybody agrees it should be AMS Collaboration otherwise I think that more clearly it should be LMSO.

6) Table D-6 where it says: Structural Verification (Required by NASA Safety) Upper TOF First mode < 50 Hz Modal Test of TOF/TRD system will be performed. FEM will be correlated and integrated with full payload model prior to full payload modal testing. We never agreed to make a modal test of TRD and TOF together, just separately , on the contrary calculation and correlation yes.

7) cap 4.1: modified Inertial load (launch and landing)

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8) cap 4.3: modified Inertial load (emergency landing)

9) cap 4.5: acoustic loads are not applicable for RICH, U-TOF and L-TOF. For the other detectors is to be inserted the procedure provided by LMSO for the application of the acoustic loads:

- a. Calculate the mass of the panel that is affected by the acoustic load.
- b. Multiply that mass by the appropriate acoustic load factor to get the total force acting on the panel from the acoustic environment.
- c. Calculate an equivalent pressure load acting on the panel by dividing the force in step 2 by the area of the radiator panel that does not have an electronic crate behind it.
- d. Apply this pressure load to the radiator FEM.
- e. Combine these results with load cases 1001 thru 1064 only.

10) cap 6.1: to be included SF FOR SEPARATION (1.2)

11) cap 8.1: to be highlighted that in fail safe configuration only bolts are analyzed

12) cap 17.2.4: acoustic loads are not applicable

13) cap 17.2.6: acoustic loads are not applicable

14) cap APPENDIX B pag B-1 to be updated the table

15) cap APPENDIX D pag D-6, D-12, D16: inertial loads to be updated; enforced displacement to be defined.

16) pag 12: Figure 3-2 is out of date

17) pag 72: "Details on the reflector are not known at this time". (all the data have been provided)

18) TOF page D-6NO combined MODAL TEST of the TRD / UPPER TOF System will be done.ACC-ASSEMBLY page D-8 - As in

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AMS-01 NO Structural Verification of the assembled. ACC-System will be done. A FE Modal Analysis exists for the AMS-01 ACC - System.

RID Disposition: *Approved*

RID Status: *Open due to pending action.*

Action Item Information

Action Number: *1* ***Actionee(s):*** *Chris Tutt/LMSO*

Phone Number(s): *281-333-7634*

Action Due Date: *10/29/2004*

Action Completion Date:

Action: *Update as recommended.*

Action Status:

Open Items Report

Open Item Number: *AMS_02-Doc_Review-03*

RID Open Date: *6/24/2004*

RID Closure Date:

Title: *LM Master RID*

Affected Document: *All*

Initiator(s): *T. Martin/LMSO*

Initiator(s) Phone Number: *281-333-6114*

Description: *1. Configuration Management Plan and Project Plan refers to Configuration Control Panel - should be CC Board.*

2. Add major milestones to master schedule.

3. Adjust properties on all documents to have the correct titles.

4. In the ICD-C, Part II: Change ''Berthing Cues System (BCS)'' to ''Electronic Berthing Camera System (EBCS)''.

5. Typo in Section 6.9 of Project Plan: SVMS should be SVMF

6. SVP: Fatigue Spectrum needs to be updated.

7. SVP: On-orbit load environment needs to be updated to match ISS expectations.

RID Disposition: *Approved*

RID Status: *Open due to pending action.*

Action Item Information

Open Items Report

Action Number: 4 *Actionee(s):* R. Harold/LMSO

Phone Number(s): 281-333-6134

Action Due Date: 8/30/2004

Action Completion Date:

Action: Update text in ICD-C Part II

Action Status: Open

Open Items Report

Action Number: 6 *Actionee(s):* C. Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 8/31/2004

Action Completion Date:

Action: Update SVP as required.

Action Status: Open

Open Items Report

Open Item Number: AMS_02-Doc_Review-52

RID Open Date: 6/24/2004

RID Closure Date:

Title: SSRMS Frequency Requirement Verification

Affected Document: SVP Revision C

Initiator(s): J. Harcinske/Boeing EVR

Initiator(s) Phone Number: 281-226-6280

Description: Section 17 (Payload Components) does not address requirement SSRMS frequency requirement (SSP 57003, 3.7.3.B - An Attached Payload requiring SSRMS support shall be within the robotic payload properties of Table 3.7.3-1.). The JSC 28792 text indicates that the SRMS requirement is addressed but not the SSRMS requirement.

RID Disposition: Approved

RID Status: Open due to pending action.

Action Item Information

Action Number: 1 **Actionee(s):** C. Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 10/29/2004

Action Completion Date:

Action: Update SVP as recommended.

Action Status:

Open Items Report

Open Item Number: *AMS_02-Doc_Review-53*

RID Open Date: *6/24/2004*

RID Closure Date:

Title: *Berthing Loads in SVP*

Affected Document: *SVP Revision C*

Initiator(s): *J. Harcinske/Boeing EVR*

Initiator(s) Phone Number: *281-226-6280*

Description: *Section 4 (EVR Loads) does not address requirement SSP 57003 3.7.3.C (An Attached Payload requiring SSRMS support may be subjected to the contact conditions specified in Table 3.7.3–2, but is not required to capture (berth) during impact.). The text indicates that the loads in JSC 28792 Section 4.2 include berthing loads but it is not clear that these represent the type of impulse contact load defined in SSP 57003 table 3.7.3-2.*

RID Disposition: *Approved*

RID Status: *Open due to pending action.*

Action Item Information

Action Number: *1* **Actionee(s):** *C. Tutt/LMSO*

Phone Number(s): *281-333-7634*

Action Due Date: *10/29/2004*

Action Completion Date:

Action: *Update SVP to incorporate changes.*

Action Status:

Open Items Report

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Open Item Number: AMS_02-Doc_Review-66

RID Open Date: 6/24/2004

RID Closure Date:

Title: Updates to JSC 29095 (PIH ICD)

Affected Document: JSC 29095

Initiator(s): T. Martin/LMSO

Initiator(s) Phone Number: 281-333-6114

Description: 1) pag 62: Figure 4.1.6.1-3 USS-02 (7 of 10) is out of date (RICH interface)

2) pag 71: Figure 4.1.6.1-6 Experiment Mounting Configuration (4 of 4) is out of date (RICH interface)

3) pag 89: Figure 4.1.6.1-11 RICH to USS-02 Mounting Locations (1 of 3) is out of date (RICH interface)

4) pag 91: Figure 4.1.6.1-11 RICH to USS-02 Mounting Locations (3 of 3) is out of date (RICH interface and fasteners)

5) pag 114: Table 4.3-1 and 4.3-2 (extracted from JSC-28792B, Section 4.1) aren't anymore valid and applicable

6) pag 115 & 116 & 128 : {Note: Factor of safety requirements above were copied from JSC-28792 Revision B.} revision B isn't anymore applicable.

7) page 96 (4.1.6.1 "E": 1. Electronics Crates : there are 2 electronics racks that are used to mount the majority of the electronics crates .) Was 4 electronics.... : RICH&ECAL radiators are no more foreseen.

8) page 106,107 (4.1.6.1 "G"):discrepancy between dimension of USS holes on section views and the 3d model dated august 2003-may2004.

9) Appendix A : general updating of holes coordinates for USS

10) Discrepancies with document JSC29095 Part II, Dec 2001, PIH, related to the HV-BRICKS:

a) a section about the bricks attachment points should be added (possibly, at page 96 or following). CGS can provide the detailed design at the interface (bolts, washers, spacers, etc.) and the holes to be reserved

b) Envelope requirements: BRICKS do not exceed the total envelope defined in the PIH, but the previous design

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*(agreed few weeks ago) is now out-to-date: a check is needed on the accommodation, with the updated design.
In particular : the interfaces at the mounting locations on the USS must be agreed, and no interferences with other objects must be found.*

c) the location of the USS holes (lower USS) should be updated.

d) mounting I/F with USS (page 102): we confirm that the requirements are fulfilled, the washers in contact with USS shall be Aluminum alodine, no paint, surface finish TBD

e) Section 4.7 (thermal control) is fulfilled.

11) pag 116: even during the first mission phases (STS free flying, AMS-02 in STS with STS docked to the ISS) the experiment will employ active thermal control in the form of heaters and cooling loops.

12) Incorporate comments in the attached document (AMS-02 Rebaselining RIDs for ICD-C Part II.doc)

13) Review all drawings to ensure that they reflect the latest interface and subcomponent design, and update if necessary.

RID Disposition: *Approved*

RID Status: *Open due to pending action*

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO

Phone Number(s): 281-333-6134

Action Due Date: 8/30/2004

Action Completion Date:

Action: *Updated as indicated.*

Action Status:

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Open Item Number: AMS_02-Doc_Review-67

RID Open Date: 6/24/2004

RID Closure Date:

Title: Updates to JSC 29202

Affected Document: JSC 29202

Initiator(s): T. Martin/LMSO

Initiator(s) Phone Number: 281-333-6114

Description: Vacuum Case ICD changes (JSC-29202B)

1. Change JSC Directorate.
2. Remove Ken Bollweg, J.R. Bates, J. Ross, and Professor K. Lubelsmeyer on signature pages. Add Trent Martin, Steve Porter, Robin Stafford Allen, and (?? for Aachen).
3. Update Figure 1.2-1, AMS-02 Payload and Experiment
4. Update Figures 2.1-1 and 2.1-2, AMS-02 Payload and Experiment Coordinate Axis and Origin (Note: There are no changes to the dimensions. These models are over 2 years old and out of date)
5. Update Figure 2.2.1-2, Vacuum Case Cross-Section. Dimensions have not changed but figure already exists that contains a better representation of the magnet and helium tank.
6. Update Figure 2.2.1-5, O-Ring Groove Detail. Remove o-ring or show compressed. Remove "Note: All dimensions are TBD pending the results of the small scale o-ring test."
7. Update strap port details in Figures 2.2.3-4 through 2.2.3-7 based on assembly issues during the Denver dynamic tests. (These changes were already made on the Vacuum Case drawings)
8. Update the feed thru port callouts on Figures 2.2.4-1 through 2.2.4-3. The locations have not changed.
9. Rename section 2.2.7 from Cryo Service Port to SFHe Tank Fill Port. Update text to remove references to Cryocoolers in this section.
10. Update section 2.2.8 and figures to reflect the new SFHe Tank Fill Port. This will include both flight and ground

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configurations. All other keep in/out zones have not changed.

11. Update section 2.2.9 and figures. Several generic holes were removed due to redesign after weight increase.

12. Update section 2.2.11.3 and figures. Several generic holes were removed due to redesign after weight increase.

13. Update section 3.1 to add more detail on the assembly of the cold mass/cmr to the vacuum case.

14. Update section 3.1.2, Strap System.

15. Update section 3.2, Assembly procedure between VC and ACC.

16. Update section 3.3, Assembly procedure between VC and Tracker.

17. Update section 4.0, Vacuum Case vacuum and test requirements.

18. Update document per the attached changes (Vacuum Case ICD Changes.doc)

RID Disposition: *Approved*

RID Status: *Open due to pending action*

Action Item Information

Action Number: *1* ***Actionee(s):*** *P. Mott/LMSO*

Phone Number(s): *281-333-6451*

Action Due Date: *9/30/2004*

Action Completion Date:

Action: *Update as indicated*

Action Status:

Open Items Report

Open Item Number: AMS_02-Doc_Review-68

RID Open Date: 6/24/2004

RID Closure Date:

Title: Update to 8.2.1 Operations Procedures Description

Affected Document: JSC 29095 Part I

Initiator(s): L. Arnold/NASA-DO5

Initiator(s) Phone Number: 281-483-0623

Description: Inadequately describes the procedures that will be developed for flight operations.

RID Disposition: Approved

RID Status: Open due to pending action

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO
P. Nemeth/LMSO

Phone Number(s): 281-333-6134
281-333-6116

Action Due Date: 10/29/2004

Action Completion Date:

Action: Update as recommended.

Action Status:

Open Items Report

Open Item Number: AMS_02-Doc_Review-78

RID Open Date: 6/24/2004

RID Closure Date:

Title: ICD/Roles and Responsibilities

Affected Document: JSC 29095

Initiator(s): R. Schwarz/NASA-EA2

Initiator(s) Phone Number: 281-483-2378

Description: Organizational roles and responsibilities defined in the ICD JSC 29095 parts I and II do not match draft update of the AMS Project Management Plan JSC 27296. ICD Section 3 - JSC PIB is referenced - needs updated (check other references of PIB)

RID Disposition: Approved

RID Status: Open due ot pending action

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO

Phone Number(s): 281-333-6134

Action Due Date: 8/30/2004

Action Completion Date:

Action: Update ICD

Action Status:

Open Items Report

Open Item Number: *AMS_02-Doc_Review-79*

RID Open Date: *6/24/2004*

RID Closure Date:

Title: *ICD Missing Information*

Affected Document:

Initiator(s): *R. Schwarz/NASA-EA2*

Initiator(s) Phone Number: *281-483-2378*

Description: *The AMS ICD part II includes numerous "To Be Determined" statements regarding physical interfaces:*

- Cryomagnet pneumatic valve*
- Helium tank*
- TRD gas supply and associated plumbing*
- Cabling interfaces*
- Cryomagnetic rectifiers*
- Thermal Control System.*

These are examples, not a complete list.

The TBD items could drive major redesign and constitute a program risk.

RID Disposition: *Approved*

RID Status: *Open due to pending action*

Action Item Information

Open Items Report

Action Number: 1 *Actionee(s):* R. Harold/LMSO

Phone Number(s): 281-333-6134

Action Due Date: 8/30/2004

Action Completion Date:

Action: Update PIH to AMS ICD for TBDs

Action Status:

Open Items Report
